

2. Industry Logistics

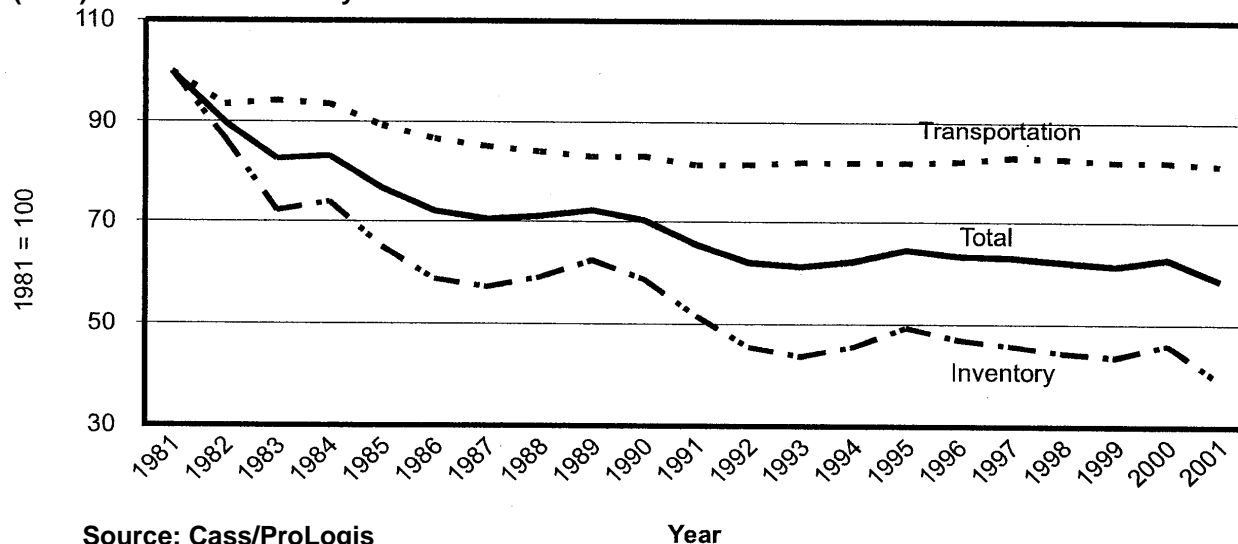
Overview – Industry Logistics Patterns

Worldwide logistics trends have created an intensely competitive global environment in which Bay Area shippers, receivers, carriers, and intermediaries participate. From the myriad shifts taking place in the logistics field, the study team has isolated several major trends with implications for Bay Area and regional goods movement and the associated industry clusters.

Customer requirements are changing and suppliers are responding to it by giving “better, faster, cheaper” services. Cost of inventory is continuously declining for most of the industries. But the food industry in the Bay Area has not reduced its inventory as a percentage of goods sold. The Bay Area is moving to more consumer and services industries with the increase in population.

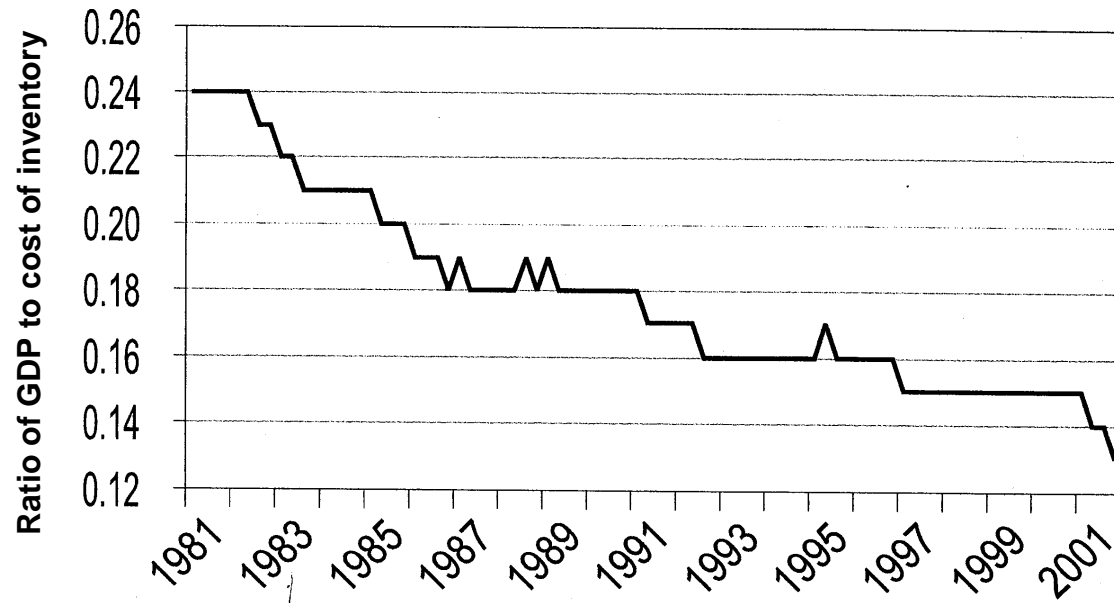
Manufacturing Businesses Are Trending Toward Smaller Inventories and Depending More on Transportation to Contend With Increased Demand for High-Value, Fast and Reliable Service

Index of Total Cost of logistics as percent of Gross Domestic Product (GDP) for USA based on year 1981



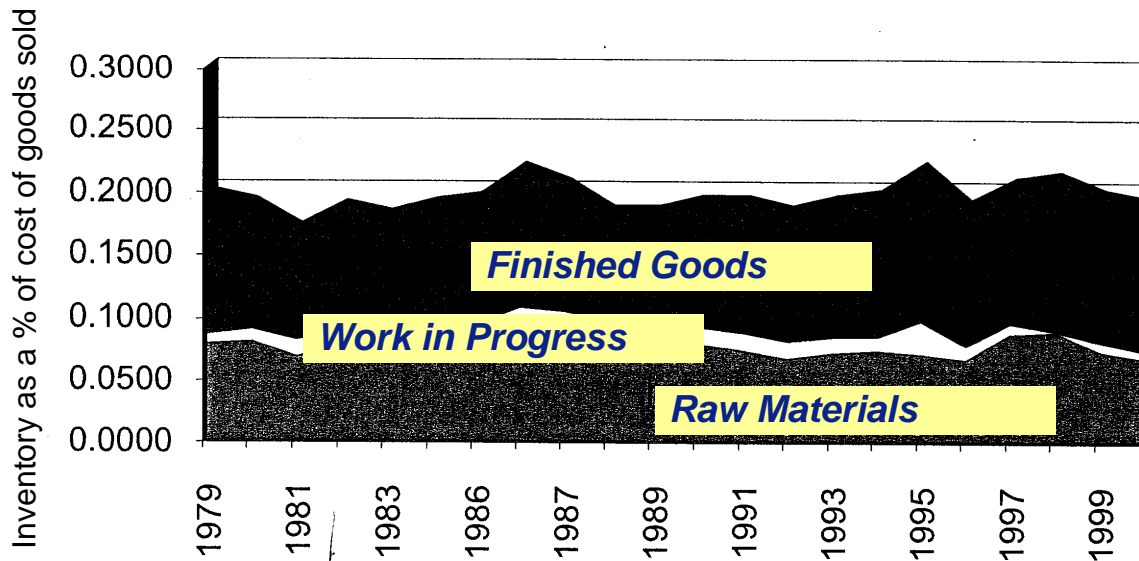
- Trucks are becoming “rolling warehouses”
- “Better, faster, cheaper” is the mantra.
- Long-term trend shows total logistics costs have been reduced to 9.5 percent of U.S. GDP, as transportation costs have leveled off.

Cost of inventory continues to decline



Source: U. S. Department of Commerce

But not all industries (or companies) are participating in the benefit of reduced cost of inventory



Source: The Ohio State University Supply Chain Management Research Group

- Specifically the food industry which is important to the Bay Area economy has not reduced its inventory as a percent of cost of goods sold

Eight actions dominate customer's approach

- **Outsourcing: buying services rather than doing it themselves**
- **Global coverage: requiring carriers to have global reach**
- **Results orientation: manage to expectations and by exception**
- **E-commerce: maximize use of technology, particularly for information**
- **Smaller shipments: hold less inventory, fill orders faster**
- **Web-based start-ups: attempt to use non-asset providers' management and information services**
- **Smaller local shipments: use of more small trucks for local distribution**
- **Security: responding to homeland security concerns**
- **Also,**
 - Reduce cycle times: faster from order to delivery
 - Moving inventory into place just when it is needed for use
 - Demand pull forecast of inventory and shipments

Bay Area is moving to more consumer and services industries while growing population significantly

■ **Manufacturing:**

- Heavy manufacturing is very limited; most of it has departed
- Food processing has moved to Central Valley
- Light manufacturing, particularly electronic components has increased significantly
- Local assembly of durables and non-durables for local consumption has increased

■ **Distribution:**

- More consumer non-durables for local consumption due to growth of population
- Limited examples of local production for national distribution, e.g. NUMMI
- More import and export through the ports for local and Northern California, vehicles through Benicia
- Significant distribution of building materials

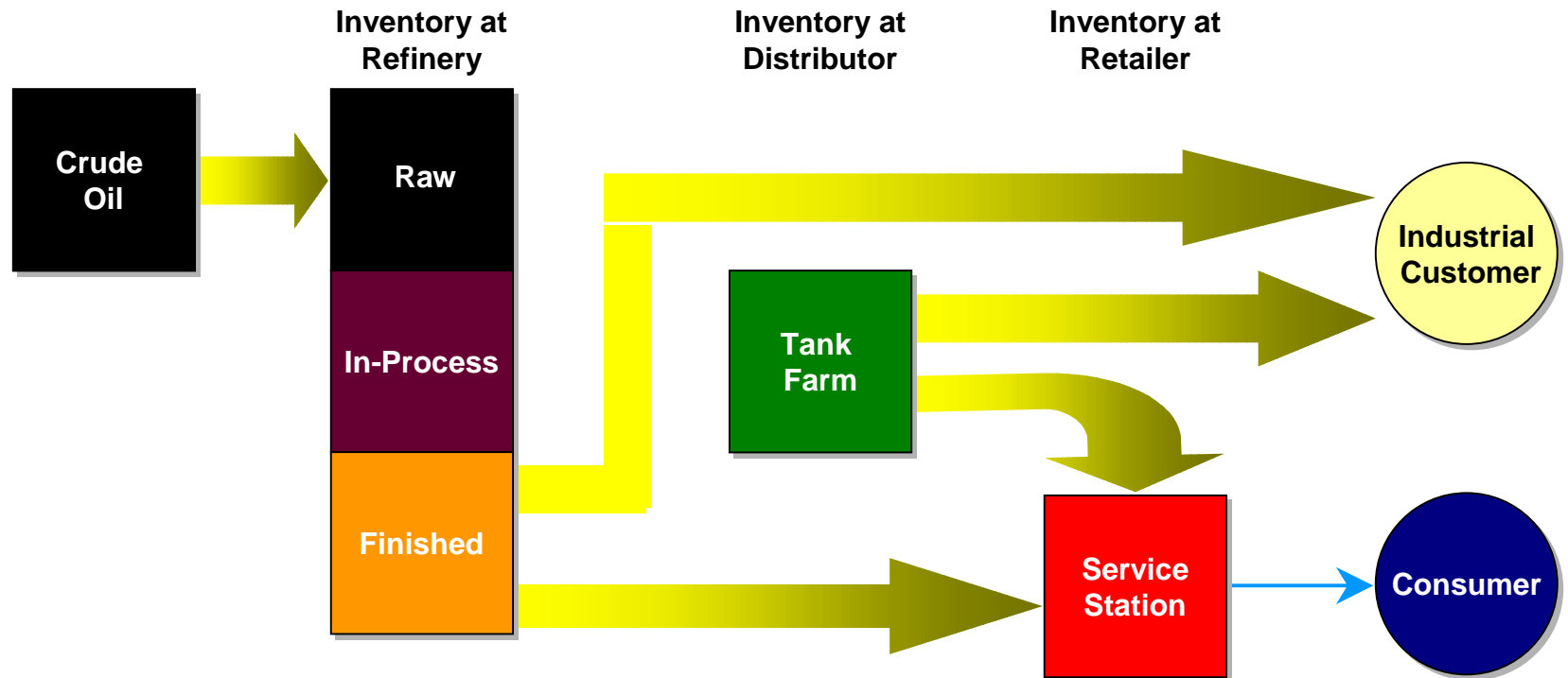
■ **Employment shifting to service industries**

- Uses significant amounts of consumables and services
- Requires significant expansion of offices and distribution centers

Logistics Patterns of Significant Bay Area Industries - Case Studies

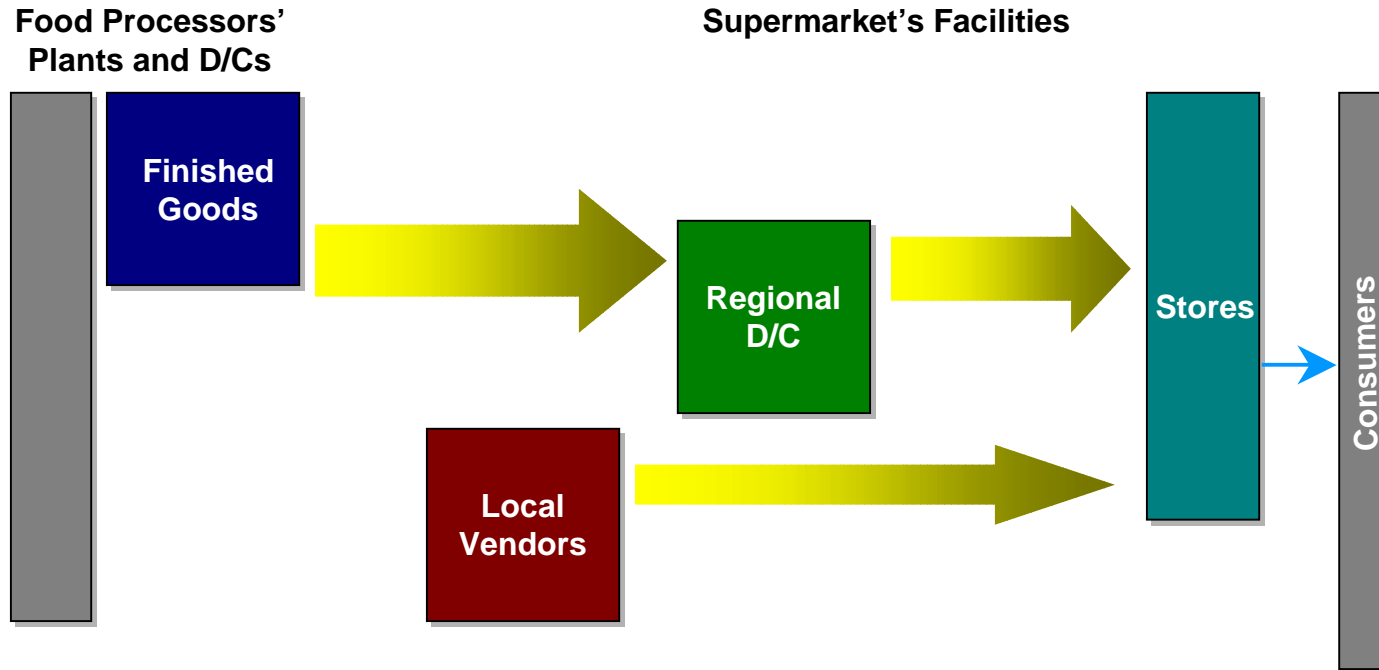
- **Integrated Petroleum Refining and Distribution**
- **Supermarkets**
- **Trucking Support Services – Parts, Tires**
- **Construction**
- **Food Processing and Distribution**
- **Cut Fresh Flowers, International**

Integrated Petroleum Refining and Distribution



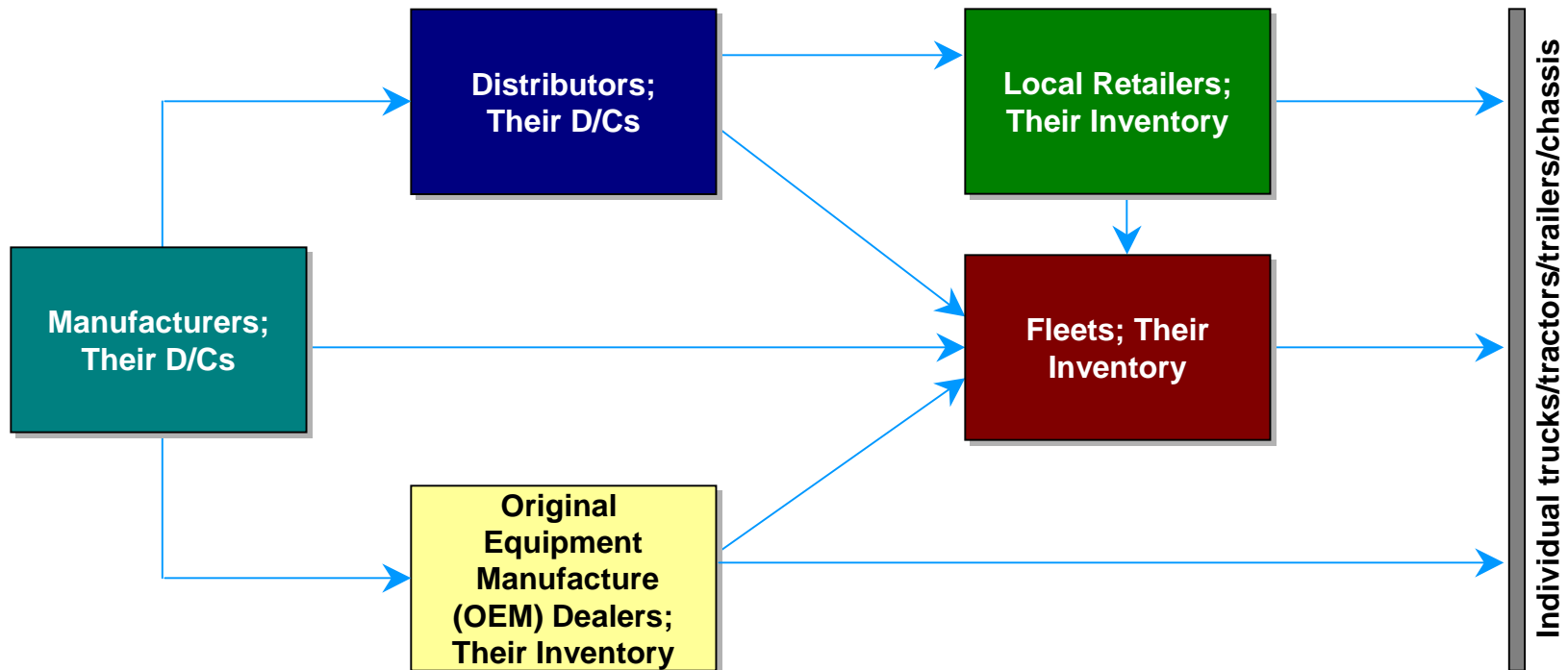
- Transportation and shipment size: crude is pipeline or ship; finished is rail tank carload or bulk tank truckload
- Inventory: Crude and in-process are continuous forcing accumulation at finished and tank farms
- Distribution: Slow, predicable lead times. Crude is Alaska to Contra Costa; finished is regional; to service station is local

Supermarket



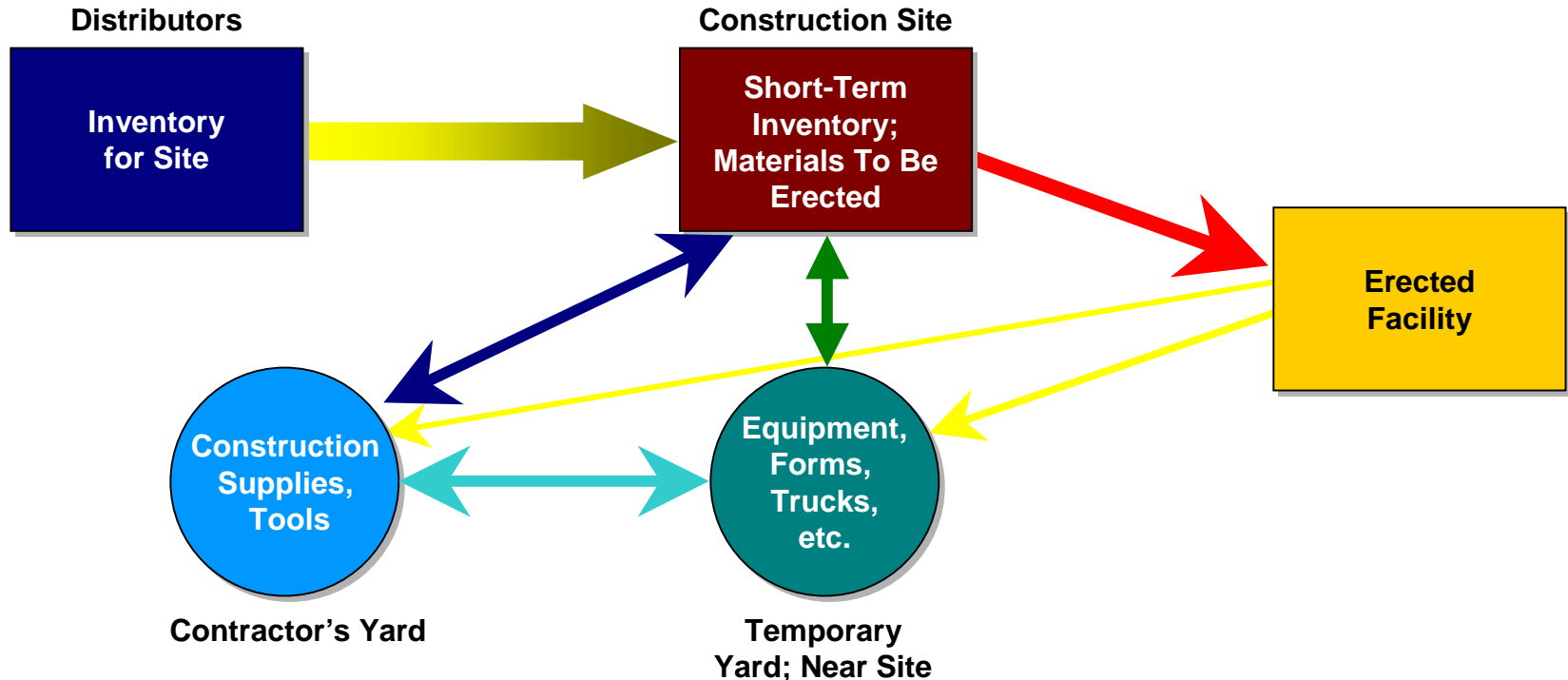
- Transportation and shipment size: to distribution center (D/C) is rail carload and truckload; to stores are truckload; local vendors are small local peddle trucks
- Inventory: Finished goods are held at processors' locations; they flow-through at supermarket's D/C
- Distribution: Demand pull from point of sale data. Finished goods are nationwide; regional D/Cs are local

Trucking Support Services – Parts, Tires



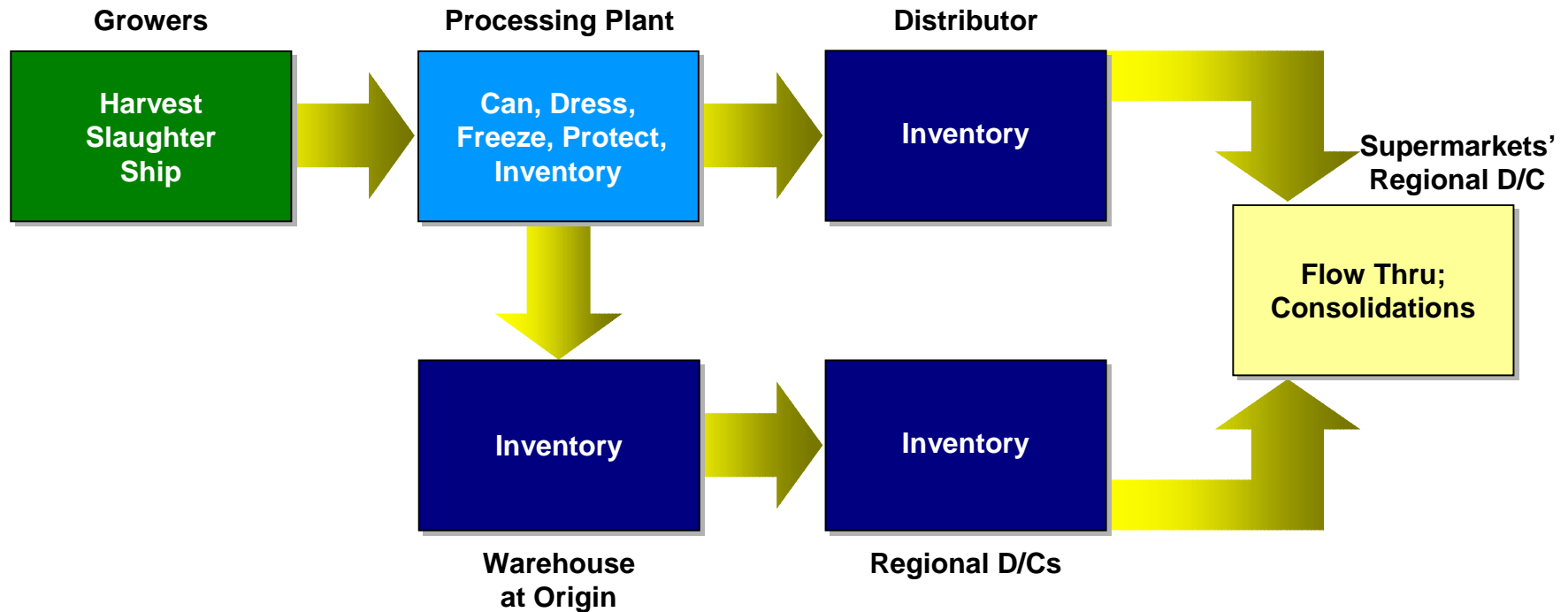
- Transportation and shipment size: to distribution centers (D/Cs) are truckloads; to dealers, fleets and stores are daily peddle trucks; local retailers are small vans and pickups
- Inventory: Finished goods are held everywhere except at the point of installation onto the vehicle
- Distribution: Instant availability near point of use. Finished goods are nationwide; dealers, regional D/Cs, retailers and fleets are local

Construction



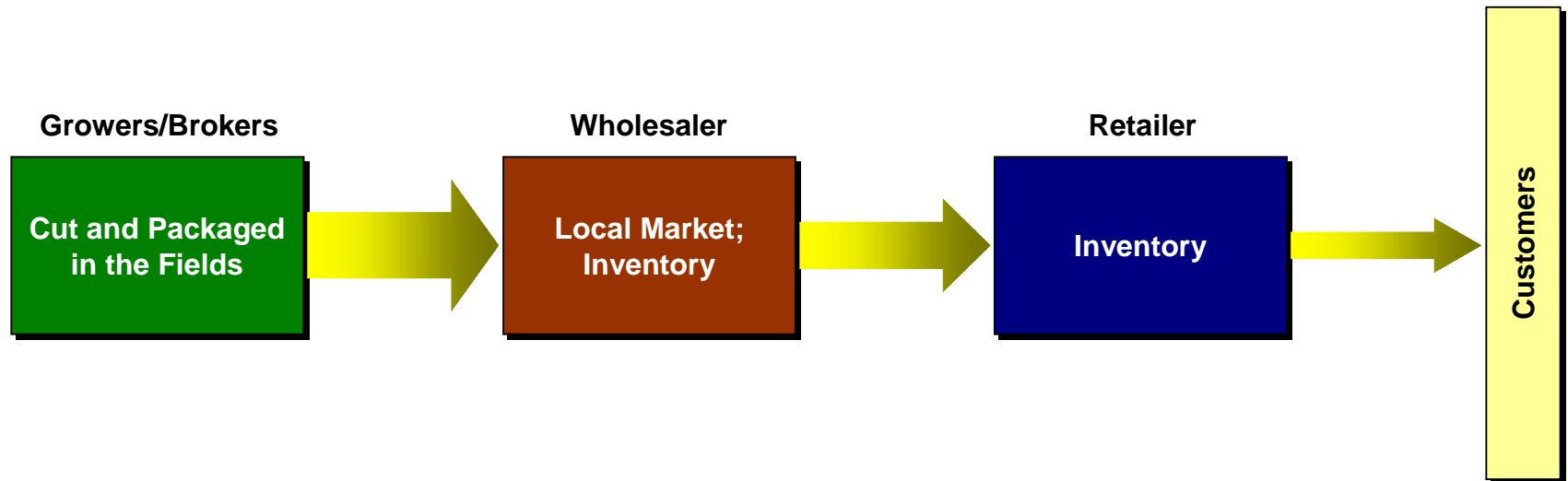
- Transportation and shipment size: to site and yards are trucks of various sizes
- Inventory: Materials to be installed are held at distributors and staged at construction site; supplies, equipment, etc. are used at site, staged at temporary yard and stored at contractor's permanent yard
- Distribution: Timely sequencing/staging is key. Materials to be installed are national; supplies and equipment for use in erection of facility are regional/local

Food Processing and Distribution



- Transportation and shipment size: to warehouse, distributor, distribution centers (D/Cs), supermarkets' D/Cs is rail carload and truckload
- Inventory: Seasonal production; year long inventory; finished goods are held at multiple points; they flow-through at supermarket's D/C
- Distribution: Slow, predictable. Finished goods are nationwide; D/Cs are regional

Cut Fresh Flowers, International



- Transportation and shipment size: small local trucks, except 1) air freight from airport of embarkation to airport for debarkation, thence 2) truckload substituted for air from airport of arrival to inland market
- Inventory: Perishable, protect from heat and cold; finished goods are held as close to consumer as possible
- Distribution: Fast transit; finished goods are nationwide; local market is the D/C